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Abstract

Results of pilot and field tests suggest that teachers should be encouraged to use the classroom management technique of structured reinforcement. In the 1967-68 pilot test 18 teachers (eight experimental and 10 control) systematically varied several parameters of reinforcement in classroom situations to determine their effects on the attainment of specified behavioral objectives. Use of teacher's conventional verbal praise was compared to use of a point system in which accumulation of a specified total resulted in a tangible reward. Results were assessed subjectively and statistically: teachers successfully applied learning principles to the classroom situation; children's classroom behavior improved (as compared to teachers' previous classes and to the control classes which took the same achievement tests); and motivation increased. Statistical results on the effects on cognitive and affective gain are not yet available for the larger 1968-69 field testing by 45 teachers in four states, but reactions continued to be positive. To use structured reinforcement the teacher should examine the entering behavior of his students; specify to himself the behavior he would like the class to demonstrate; specify to his class the behavior it is to exhibit; make a reward contingent upon its behavior; reward the desired behavior. (Included are lists of behaviors rewarded, suggested rewards, and anecdotal comments and suggestions of the pilot and field test teachers.) (JS)

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CLASSROOM APPLICATION of STRUCTURED REINFORCEMENT

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PREFACE

"The process is very effective. This is the greatest thing since jelly beans!"

"It is a simple process and takes only as much time as you want to devote to it."

The comments reflect response of 45 teachers who field tested the Southwestern Cooperative Eductional Laboratory's classroom management technique described in this volume.

The process of rewarding pupils for the achievement of behavioral objectives was empirically tested in eight first grade classrooms during the 1967-1968 school year. The significant results obtained indicated that the technique was ready for field testing.

SWCEL continued experimentation with a larger population of teachers in Arizona, New Mexico, Oklahoma, and Texas in an attempt to verify the results of the 1967-1968 pilot testing. Forty-five teachers in four states participated in that field trial (1968-1969). Statistical results of effects of this technique on cognitive and affective gain have not been completed at this writing. However, the positive reactions of the teachers indicate that all efforts should be made to encourage teachers to use this method of classroom management.

INTRODUCTION

Classroom Management Through Structured Reinforcement

Traditionally, the teacher has implemented his instructional materials by relying primarily on teacher training and experience. A glance at textbooks on applied education and at classrooms reveals that the teacher has been given very little assistance in systematically applying learning principles to the classroom.

It is one of the purposes of Southwestern Cooperative Educational Laboratory to facilitate this application of theory to the classroom.

SWCEL uses known research to bridge the gap between theory and practice. While some basic research may be conducted, most of its efforts are aimed at applied research and directed toward the marriage of content and implementation of procedures.

During the 1967-1968 school year, SWCEL worked with 18 (eight experimental and 10 control) teachers who systematically varied several parameters of reinforcement in classroom situations to determine their effects on the attainment of specified behavioral objectives.

The purposes of this research were to study and develop classroom management techniques which would increase pupil interest in the learning process and to determine if these strategies were related to changes in pupil behavior.[1]

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[1]Detailed information can be found in: Bemis, K. A. & Shroeder, G. B., "Effects of Varying Quality, Amount, and Delay of Reward in the Classroom", Contributions to Knowledge, a group of papers presented at the annual convention of the American Educational Research Association, Los Angeles, California, February 5-8, 1969.

PROCEDURE

Eighteen first grade teachers from four schools in a lower socio-economic area in a Southwestern city participated as experimenters. Their respective students served as subjects for the study. The investigation was conducted during the course of three consecutive six-week periods.

Two types of reinforcing conditions were compared: the teacher's conventional verbal praise, and a point system where accumulation of a specified total resulted in a tangible reward. Additionally, two incentive goal conditions were studied under the point system. One was a short-term goal condition where a small reward, i.e., an extended recess, occurred approximately every week for six weeks. The other was a long-term goal condition where a large reward, for example a trip to the zoo, occurred after six weeks. Each condition--the verbal praise with no tangible reward, the short-term reward, and the long-term reward--was experienced by each class. However, the order in which they were experienced differed between classes.

Eight teachers were randomly assigned to varying orders of the experimental conditions. For example, a teacher might use the long-term goal condition for six weeks, then the short-term goal condition for the next six weeks and finally, the control condition for the last six weeks.

The teachers using the long-term and short-term reward conditions rewarded the children with points for desired behaviors. These points were accumulated for the class as a whole, which was advised that the reward would be contingent upon its accumulating a specified total. Progress toward this objective was indicated through use of a large pressboard giraffe displayed in the classroom upon which was painted a scale ranging from zero to 100. A small toy monkey was manipulated by the teacher (moves

corresponding with points scored) to show the children their progress. At the beginning of each reward condition, the monkey was perched at the lower part of the giraffe's neck--at zero. At the end of the reward condition, the monkey had progressed to the top of the giraffe's head--to 100 on the scale.

At intervals of either one or every three days (depending on the incentive goal conditions), the teacher announced the number of points the class had earned. The monkey was then advanced up the giraffe's neck in corresponding moves. Assignment of points was based on the teacher's subjective estimate of the extent to which desired behavioral objectives had been observed.

Pupil behaviors included such responses as entering the classroom quietly, helping each other follow directions, and writing their names on their papers.

The rewards for attaining these objectives, generated by the eight teachers, were of the variety available to almost any teacher. Short-term, or small rewards, included such activities as conducting a class outside, eating lunch in the classroom, and performing with rhythm instruments. Long-term, or big rewards, were a trip to an air base, a trip to the teacher's home for lunch, and viewing a feature film at school.

RESULTS

The results of this experiment were assessed both subjectively and statistically. Review of a year's evidence in the form of statistical results and teachers' responses, showed that the teachers bridged the gap between theory and systematic classroom application of theory. It was evident that teachers could successfully apply learning principles to the

classroom situation. A second observable result was that the teachers reported that children's classroom behavior, as desired by the teachers, was improved over that of other first grade classes they had taught previously. In addition, children's motivation was increased. One teacher commented: "One outstanding difference I have noticed in the children while working for rewards is increased endeavor earlier in the semester and a great deal of 'bubbly' enthusiasm."

Some results were revealed by statistically analyzing cognitive and affective measures. Ten maturational classes (first grades in the same schools which participated only by being tested by SWCEL instruments) were compared with the eight experimental classes. The eight experimental classrooms achieved significantly better, at the .01 level of confidence, than did the maturational controls on the Arithmetic Fundamentals subtests of the California Achievement Test, (CAT), Form W, 1957 edition.

The SWCEL Student Questionnaire was employed to assess student affect. Random samplings of children in experimental and control classrooms were interviewed during the course of the study. At the end of the study, the experimental group's self-esteem proved to be higher (at the .01 level of confidence) than that of the control groups on the factor self-esteem.

Within the experimental groups, results indicated that the classes rewarded under short-control-long (SCL) and long-short-control (LSC) conditions had significantly greater self-esteem (at the .05 level of confidence) than did classes in the other reward conditions as measured by the SWCEL Student Questionnaire.

It was found that classes rewarded under the two conditions SCL and

LSC scored significantly higher on CAT subtests, a greater percentage of the time than did the classes rewarded under other orders of reward conditions.

Reactions to the program continued to be positive during the larger 1968-69 tests. (Appendix A includes anecdotal comments and suggestions of teachers who used this strategy during the pilot testing and field testing.)

HOW TO USE STRUCTURED REINFORCEMENT

In employing this classroom management strategy, use the following steps:

1. Examine the entering behavior of your students. You undoubtedly will observe some classroom behaviors which are undesirable, and which you would like to change to provide a classroom atmosphere more conducive to learning.

2. Specify to yourself the behavior you would like your class as a whole to demonstrate. Instead of thinking in terms of negative behaviors, e.g., "I wish they would not be so rowdy when entering the classroom", specify a positive behavioral objective for your class, "The class will enter the room quietly." (You may wish to add "and work on a previously assigned task at their seats").
Appendix B includes a list of behaviors which primary teachers in four states rewarded.

3. Now specify to your class the behavior it is to exhibit. One striking feature of a behavioral objective is that it permits you to communicate the desired behavior to your class, and permits the students to know what is expected of them.

4. Make a reward contingent upon their behavior. e.g., "The monkey will move up if you all come in from recess quietly, take your seats and begin to work on your seatwork. When he gets to the top we will get to go to the zoo on the bus (or pop popcorn in the classroom, fingerpaint, etc.)" A list of rewards suggested by teachers as readily available in the classroom appears as Appendices C and D.

5. Reward the desirable behavior. If the class performs as directed in the behavioral objective, move the monkey up the giraffe's neck. Assignment of points (how high the monkey goes during any time period) is based on subjective estimate of the extent to which behavioral objective has been reached. It should be emphasized, at this point, that:

a. The entire class may not perform the desired behavior at any one time. Move the monkey anyway if you think the performance of the majority of the class justifies it. The other pupils will come around. Teachers report that the children will try to get the more uncooperative pupils to work for the goal of getting the monkey to the top and obtaining the reward.

b. Have the monkey get to the top after a short period of time during the first few days of school. When the children learn that the monkey eventually does get to the top, and the teacher keeps his promise to reward them, they learn to wait a longer period of time for a reward. With kindergarten children, it is advisable to have the monkey move all the way to the top

on the first day of school. The reward for such a short-term behavior can be simply hearing a story read, blowing bubbles in the classroom, etc. The rewards can become greater in magnitude if the children have to work a long time for the reward. First grade children have waited and worked hard for six weeks while waiting for the monkey to get to the top of the giraffe so they could get to go to the zoo.

c. After a few weeks of school, the monkey's movement up the giraffe's back becomes a secondary reinforcer. The children almost forget about the reward because they are so excited over the fact that they made him move.

d. Most teachers and pupils name the monkey (Joey, Tommy, Coco, etc.). One teacher reports that the children wanted the monkey to share the reward, which was a picnic in the park, so they took "Tommy" with them.

e. Some teachers talk to the monkey. They ask the monkey if he should move up and pretend that the monkey is whispering the answer in their ear. This is quite effective with kindergarten and first grade children. They know that Tommy really can't talk, but it makes school more fun for them. One teacher, when she had to leave the children alone, asked the monkey to watch them. When she came back, she would ask the monkey how the children behaved. She said, "They were always good while I was out of the room because they thought it was a game."

*Note: Be flexible in the use of this system. The elapsed time between the specification of the desired behavior and the

movement of the monkey to the top of the giraffe can be modified to fit the maturity level of the class.

APPENDIX A: Comments

The following comments were submitted to SWCEL in May of 1969 in response to a questionnaire.

1. How effective is the process of using the giraffe-monkey? How practical is it for you to use on a day-to-day basis?

"It was practical. The process was very effective. They (the children) really worked on moving that monkey up."

"Quite effective. It was attractive to the children from the first and they looked forward to the climb up, and never allowed me to forget to evaluate and move him up."

"Very good."

"It's quite a simple process and takes only as much time as you want to devote to it. It ranged from about 60 seconds some days to 15-20 minutes when we're really excited about something."

"The process was and can be even more effective now that this year's experience is behind us. There's enough flexibility in this classroom management procedure so that it can be made to work effectively. Even on a day-to-day basis, it can have its merits. Children don't need great big rewards to be impressed."

"Most effective on day-to-day basis, even on an hourly time block. The process is very effective."

"I felt it was very effective, except that I would not put a definite number of days for it to climb from the bottom to the top."

"It was quite effective. The more I used it the more practical it became. I could use it with a minimum of time."

"The children learned to read the objectives and knew just what was expected. I found it very rewarding."

"Very practical! Very effective! Very easy!".

"The children like it. They are working toward a provided goal. It is very practical in that they help each other to follow the pattern set for that week."

"My children really respond to the monkey and giraffe. They help us get many things accomplished. I prefer short term to the long term."

2. Does the use of the giraffe-monkey help the youngsters learn the lessons? In what ways?

"Not especially in learning, but in getting work done and done correctly."

"Yes, the students worked together for the rewards. When some of the management problems were toned there was a better learning atmosphere."

"It motivated the children's desire to learn, in itself. Then the reward was also an incentive."

"Yes. They memorize some things faster."

"I think it reinforced good behavior in my PM class; didn't do a thing for the morning class."

"Many times, "Mako's" moving provided just enough incentive to accomplish what we needed to get done."

"Yes. They have a definite time limit in which to accomplish the goal they set out to reach whether it's six weeks or a few days."

"Yes, by giving them a goal it creates more attention to the lesson at hand."

"They were just very eager and it was something new everyday."

"Yes because they are working toward a behavior goal which encourages discipline, or rules for the classroom."

"Gives them incentives they need to try harder."

"Yes, because more children respond and pay attention because of the whole class condition in moving our monkey."

3. Does the introduction and use of the giraffe-monkey in any way modify the general learning atmosphere of the classroom?

"The children were conscious of whether each one was doing his part--learning--so as to move the monkey up. They helped each other to achieve, and on occasion rather actively helped one another."

"It motivates highly."

"Yes, it and the reward makes the learning atmosphere more inviting, because they're getting something other than a grade for their learning."

"The competitive spirit and reward of the monkey jumping helped accomplish many things and modify undesirable behavior."

"It seems to increase the general learning atmosphere. Peer group puts pressure on individuals not conforming."

"No, it just helps and how I don't know. You would just have to observe my room."

"Very cooperative to get their reward."

"Yes, because they are working toward a behavior goal which encourages discipline, or rules for classroom."

"Yes, I didn't have to "push" so hard for good work."

4. Do you think that you could use the monkey-giraffe procedures in other classroom situations?

"Yes, I have successfully done so."

"Certainly."

"Yes, there's no end to the possibilities for which their classroom management procedures may be used. It can be used as the incentive of any learning situation."

"Most definitely! This is the greatest thing since jelly beans."

"Yes, in fact I used it in many situations throughout the day."

"In almost any classroom situation."

"Yes." You reward in many ways. This decorates the room, helps them see their progress, and provides a specific goal to work toward."

"I used this procedure throughout the day in all activities."

"Yes. I plan to use it next year even though I will not be involved in OLP."

5. What is the effect of the monkey-giraffe procedures on the morale of the class? Are the effects different for different types of youngsters, i.e., shy, average, or aggressive pupils? How?

"The class loved it. They really worked at it. Some children (shy) showed little change while others seemed to feel they had participated in a class project and felt they belonged. It caused some of the problem students to calm down."

"The morale was heightened--children tended to help each other--remind each other, or even scold one sho was remiss in carrying out the objectives."

"Brings out whatever I am working for."

"The children <u>enjoyed</u> the monkey-giraffe. I think a certain degree of maturity is necessary for it to be effective."

"Stimulating; I see a little less <u>response</u> on the part of very shy, withdrawn children, but this does not mean less effect!"

"Generally it raises morale and tends to unify class to common goal--that <u>reward</u>!"

"I have found that most of the children get very enthused about the monkey and giraffe. This is especially true when it is an immediate reinforcement (time block rather than daily). More effective results were obtained by stressing completion of work than striving for a particular behavior such as listening."

"The effect did differ according to the type of youngster. Some children watched it very closely; other children were not concerned and never really tried. Mostly aggressive--antagonistic type youngsters made a big fuss, and were not concerned whether the monkey jumped or not."

"The morale of the class as a whole improved. I noticed no difference as far as types of youngsters was concerned."

"It helps the shy child express himself and the aggressive pupils to do better work."

"Yes. Shy ones mentioned it at home, I discovered. I couldn't really tell they were interested in it at school. It meant a great deal to them. Good children tried to get rowdy ones to behave and get monkey up."

"There are always some children who are not interested in behavioral objectives. The children for the most part helped each other by asking them to follow the objectives."

"I didn't notice a particular effect upon different types of children. They were all enthusiastic about it. The type and output of their work were much better."

"My class enjoyed the treats that "Tommy" thought up for us. We used him first on behavior problems such as "listening," "being quiet," etc. I found he was not nearly as effective as when I used him to have children accomplish a certain amount of some type of work--mainly seat work. For us this worked better. I told my class how far Tommy could move <u>if</u> they did this--like 25 points for all seat work done by 10:00 a. m. This allowed me time to do more teaching. This procedure helped me control the more aggressive students by making them meet the demands of the whole class. Behavior has improved remarkably on this stytem."

APPENDIX B: BEHAVIORS REWARDED

The following behaviors have been suggested by teachers as some of those which they would like to reward. If you would like to reward for behaviors other than those listed below, feel free to reward, using the monkey and giraffe. Please keep a record of the behaviors for which you reward.

1. Listening attentively
2. Raising hands to talk
3. Writing names
4. Entering the classroom quietly
5. Picking up papers from the floor
6. Following directions
7. Participating in class discussion
8. Courtesy
9. Cooperating with classmates both in class and on the playground
10. Cognitive skills may also be rewarded, e.g. vocabulary and reading skills, arithmetic, etc.

APPENDIX C: SUGGESTED SMALL REWARDS

1. A surprise
2. Playing a game outside (other than recess)
3. Writing and drawing on the blackboard
4. Singing and dramatizing stories in the classroom
5. Eating lunch in the classroom
6. Performing with rhythm instruments
7. Making bean bags, stuffed animals, puppets, etc.
8. Constructing toy musical instruments from cartons
9. Finger painting
10. Extended recess
11. Popping popcorn in the classroom
12. Bubble blowing
13. Brush painting
14. Short field trip; e.g. walk around the park, school grounds, nature walk, etc.
15. Free play period
16. Playing with clay
17. Having a class outside, e.g. art, science, etc.
18. Listening to records, perhaps while other academic activity takes place

APPENDIX D: SUGGESTED LARGE REWARDS

1. Putting on a play for parents
2. Taking a trip to the zoo, air force base, fire station, trading post, grocery store, pet store, egg farm, county library, etc.
3. Viewing a movie at school
4. Watching a puppet show
5. Watching a magician
6. Going to the park for a weiner roast at lunch time
7. Having a party
8. Trip to teacher's home for lunch
9. Making candy apples